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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/315,806 | 05/21/1999 | MARTIN M. DENEROFF | 15-4-737.00 | 6955 |

7590 03/18/2005

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| EXAMINER |
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MYERS, PAUL R

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| ART UNIT | PAPER NUMBER |
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2112

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/315,806

Applicant(s)

DENEROFF ET AL.

Examiner

Paul R. Myers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 2/14/05 have been fully considered but they are not persuasive.

In regards to applicants argument that both Amini et al and Trantanella provide continuous connection of their respective devices and interface units to a common bus. Thus, neither the Amini, et al. patent nor the Trantanella patent are able to prevent their devices from providing a load on the bus as required in the claimed invention. The switches of Amini et al and Trantanella are real switches that provide high impedance and thus reduce the load of the device. Normally these switches are treated as an ideal switch that draw no load. The examiner notes the only way for there to be a difference between the switches of the cited references and applicants claimed invention is to consider the cited references as real electronic switches and the applicants switches as ideal switches (not enabled) or mechanical (not disclosed). The reference entitled Physical properties of gates is included that teaches the difference between real electronic switches and ideal switches

(<http://www.owl.net.rice.edu/~elec326/Lecture%20Notes/OnePerPage/03.PhysicalProperties.pdf>)

is provided. PN 2004/0188736 to Brindle teaches that as of 2004 ideal switches were only theoretical (paragraph 63). It has long been a desire to produce an ideal switch so as to remove all load from the bus this however has not as of yet been accomplished. The examiner has found no enablement for an ideal switch in applicants specification. In fact the application is totally silent as to the structure of the switch except to say that it can be stand alone or implemented as

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part of the processing device. Thus the examiner will both give an enablement rejection and treat the claim limitation as wherein the device provides essentially no load on the bus prior to the switch coupling the device to the bus.. The examiner notes Trantanella and Amini et al's switches are implemented as part of the device while Garnett, et al's (below) switches are stand alone.

In regards to applicants argument that the Garnett, et al. patent does not provide any disclosure of an ability to prevent its devices from providing a load on the bus as required in the claimed invention. Garnett, et al's switch is a real switch (and gives the example that they can be FET switches) like above that inherently decrease the load or in the case of an ideal switch remove the device from connection to the bus thus they remove the load.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement requiring a full clear and concise written description. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. While applicants specification states the device does not provide a load on the bus prior to the switch coupling the device to the bus. The examiner notes that only a mechanical switch or the non existent ideal switch can so isolate a device that it provides no load

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on a bus. Applicants specification is totally silent on the structure of the switch except to say that it can be stand alone or implemented as part of the processing device (clearly electronic).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 4-15 and 17-19 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Garnett et al PN 6,260,159.

In regards to claims 1 and 11: Garnett et al teaches a method of providing access to a bus, comprising: receiving a request for device access to the bus (Figure 26 item 193); selecting the request according to a priority associated with the request (in 185 Column 17 lines 48-53); generating a control signal in response to selection of the request (194); enabling a switch (33, Column 4 lines 53-67) associated with the request to couple a device associated with the request to the bus in response to the control signal. When the switch (33) is open the device would inherently provide little or no load to the bus.

In regards to claims 2 and 15: Garnett et al teaches the bus is a PCI bus.

In regards to claims 4, 13 and 18: Garnett et al teaches the requests coming from devices requiring use of the bus.

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In regards to claims 5-7 and 14: Garnett et al teaches arbitrating between a plurality of requests and granting in order.

In regards to claims 8, 10, 17 and 19: Garnett et al teaches disabling output of one device so another can access the bus.

In regards to claims 9 and 12: Garnett et al teaches a limited number of requesters.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Amini et al PN 5,396,602 in view of Trantanella PN 3,470,542.

In regards to claims 1 and 11: Amini et al teaches receiving a bus request (REQ); selecting the request according to a priority associated with the request (Abstract); generating a control signal in response to selection of the request (GNT); and enabling access to the bus in response to the control signal (Abstract). Amini et al does not expressly teach this enabling including switching the requesting devices into electrical connection with the bus. Although the examiner does not know of any interface that doesn't use switches (generally tri-state) to connect to the bus. Trantanella expressly teaches an interface unit including switches that are enabled to provide access to a bus in response to a control signal (Figure 3). It would have been obvious to use switches to connect the requesting device to the bus because this would have prevented

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signal contention that would be caused by having all devices directly connected to the bus without any I/O buffers. When switches are in high impedance state the device provides little or no load to the bus.

In regards to claims 2 and 15: Amini et al teaches the bus being PCI.

In regards to claims 3,16 and 20: Amini et al teaches the well known standard centralized PCI bus arbitration claimed above. Amini et al however teaches the older PCI standard of 33 Mhz and not the newer 66 or 100 Mhz PCI bus standards. Official notice is taken that the 66 Mhz PCI and 100 Mhz PCI bus standards are very common in the art. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the well known standard arbitration method described by Amini et al comply with 66 Mhz and 100 Mhz PCI buses because this would have prevented the arbitration method of Amini et al from becoming out of date. The examiner further notes in response to the decision of the BAPI the PCI Local Bus Specification incorporated in Amini et al is cited in support of the Official notice.

In regards to claims 4, 13 and 18: Amini et al teaches the requests coming from devices requiring use of the bus.

In regards to claims 5-7 and 14: Amini et al teaches arbitrating between a plurality of requests and granting in order.

In regards to claims 8, 10, 17 and 19: Both Amini et al and Trantanella teach disabling output of one device so another can access the bus.

In regards to claims 9 and 12: Amini et al teaches a limited number of requesters.

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8. Claims 3,16 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Garnett et al PN 6,260, 159 in view of the PCI Local Bus Specification.

In regards to claims 3,16 and 20: Garnett et al teaches the well known standard centralized PCI bus arbitration claimed above. Garnett et al however teaches the older PCI standard of 33 Mhz and not the newer 66 or 100 Mhz PCI bus standards. The PCI Local Bus Specification teaches that the 66 Mhz PCI and 100 Mhz PCI bus standards are known. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the well known standard arbitration method described by Amini et al comply with 66 Mhz and 100 Mhz PCI buses because this would have prevented the arbitration method of Amini et al from becoming out of date.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

PN 3,579,229 to Tripp teaches that ideal switches are desired.

PN 3,665,404 to Werner teaches electromechanical switches coupling devices to a processor.

PN 6,073,195 to Okada teaches switches switching between devices coupled to a bus.

PN 6,073,188 to Fleming teaches electromechanical switches coupling devices together.

PN 6,038,615 to Yamada et al teaches switches coupling a lode device to a bus.

PN 5,870,573 to Johnson teaches a switch coupling a second device to a bus to remove its load.

PN 5,481,679 to Higaki et al teaches switches coupling devices to a bus and coupling bus segments together to reduce the overall load.

JP410092169 to Connolly et al teaches switching a device from a bus to minimize the load on the bus.

JP401265345 to Koichi teaches reducing the load on a bus by using a switch to switch a device from the bus.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul R. Myers whose telephone number is 571 272 3639. The examiner can normally be reached on Mon-Thur 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571 272 3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PAUL R. MYERS
PRIMARY EXAMINER

PRM
March 17, 2005